

PATENT ABSTRACTS OF JAPAN(11)Publication number : **07-133154**(43)Date of publication of application : **23.05.1995**

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C04B 35/583**B23B 27/14****C04B 35/56****C04B 35/56****C04B 35/58**(21)Application number : **05-275347**(71)Applicant : **mitsubishi materials corp**(22)Date of filing : **04.11.1993**(72)Inventor : **ueda fumihiro****tange ryuichi****tajima itsuro****(54) CUBIC BORON NITRIDE BASE SUPERHIGH PRESSURE SINTERED MATERIAL EXCELLENT IN WEAR RESISTANCE**

(57)Abstract:

PURPOSE: To improve wear resistance, machining performance and the life by compounding and dispersing an aluminum oxide between a specified binding phase forming element and dispersion phase forming element in a special condition.

CONSTITUTION: 20-40vol.% more than one kind among carbide, nitride and carbonitride of Ti, Zr and Hf as the binding phase forming element, 6-40vol.% aluminum oxide and remainder cubic boron nitride(CBN) having 1-10 μ m average grain size as the dispersion phase forming element, moreover, Al(OH)₃ powder are prepared. The CBN powder and the Al(OH)₃ powder are stirred and mixed in NH₄OH soln. and dried to obtain Al₂O₃-surrounding CBN powder. Then, the powdery materials of these compound composition are compounded, mixed in a grinding mill, dried and pressed, and kept at 4-5GPa and 1300-1500°C for 30min in a superhigh temp. and pressure device, and the CBN base superhigh pressure sintered body having the structure in which 1-20vol.% of aluminum oxide forms continuous or intermittent surrounding layer on the surface part of CBN particles and remainder is dispersed in the binding phase is obtained.

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